Appendix

Replacement "Amendments to the Claims" Section for response filed October 17, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A seat buckle sensor assembly comprising:

~~a shield~~;

a sensor housing ~~coupled to said shield, said sensor housing comprising~~ ~~:~~;

a single sensor at least partially disposed in said sensor housing ~~for providing an output in response to magnetic flux imparted thereon~~; and

~~a magnet disposed on a lock pin of a seat belt buckle,~~ said sensor housing being configured for attachment to a seat buckle housing of a seat buckle, said seat buckle comprising a lock pin having a magnet disposed on an end thereof, said lock pin movable through a switch zone extending between a first position of said lock pin wherein said lock pin achieves a locked condition and a second position of said lock pin wherein said lock pin achieves an unlocked condition ~~said magnet disposed adjacent said sensor when said lock pin is in one of a locked and an unlocked state to cause a first output of said sensor, said magnet disposed away from said sensor when said locked pin is in the other of a locked and an unlocked state, to provide a second output of said sensor, said first output being different from said second output~~;

said sensor exhibiting a gray zone range of magnetic flux whereby flux imparted to said sensor beyond a first end of said gray zone range of magnetic flux causes said sensor to provide a first output and flux imparted to said sensor beyond a second end of said gray zone range of magnetic flux causes said sensor to provide a second output, different from said first output, said

gray zone range of magnetic flux being within a switch zone range of magnetic flux imparted by said magnet to said sensor as said lock pin travels through said switch zone, whereby said first output is provided as said lock pin travels through said switch zone before said lock pin achieves said locked condition and said second output is provided by said sensor as said lock pin travels through said switch zone before said lock pin achieves said unlocked condition.

2. (Currently Amended) A sensor assembly according to claim 1, wherein said sensor housing comprises a stepped top surface.

3. (Currently Amended) A sensor assembly according to claim 2, wherein said sensor assembly ~~housing~~ comprises a rubber sheet disposed in said sensor housing maintaining said ~~Hall Effect~~ sensor in a predetermined position within said sensor housing.

4. (Currently Amended) A sensor assembly according to claim 1, ~~wherein~~ said assembly further comprising a shield ~~comprises~~, said shield comprising a shield housing and a cover, said shield housing comprising an opening adapted to receive a portion of said lock pin therethrough.

5. (Original) A sensor assembly according to claim 1, wherein said sensor comprises a Hall Effect sensor.

6. (Original) A sensor assembly according to claim 1, wherein said sensor is encapsulated within said sensor housing.

7. (Original) A sensor assembly according to claim 6, wherein an exterior of said sensor housing comprises at least one crush rib.

8. (Currently Amended) A seat buckle assembly comprising:

a seat buckle configured to releasably retain a seat belt buckle tongue, said seat buckle comprising a seat buckle housing and a lock pin at least partially disposed in said seat buckle housing, said lock pin movable through a switch zone, said switch zone extending between a first position ~~when~~ of said lock pin wherein said lock pin achieves a ~~said seat buckle is in a~~ locked ~~state~~ condition and a second position ~~when~~ of said lock pin wherein said lock pin achieves an ~~said seat buckle is in a~~ unlocked ~~state~~ condition;

a magnet disposed on an end of said lock pin;

~~a shield comprising an opening, an end of said lock pin received through said opening;~~

a sensor housing coupled to said seat buckle housing, ~~at least partially enclosed by said magnetic shield, said sensor housing comprising~~ ; and

a single sensor at least partially disposed in said sensor housing, said sensor exhibiting a gray zone range of magnetic flux whereby flux imparted to said sensor beyond a first end of said gray zone range of magnetic flux causes said sensor to provide a first output and flux imparted to said sensor beyond a second end of said gray zone range of magnetic flux causes said sensor to provide a second output, different from said first output, said gray zone range of magnetic flux

being within a switch zone range of magnetic flux imparted by said magnet to said sensor as said lock pin travels through said switch zone, whereby said first output is provided as said lock pin travels through said switch zone before said lock pin achieves said locked condition and said second output is provided by said sensor as said lock pin travels through said switch zone before said lock pin achieves said unlocked condition.

~~for providing an output in response to magnetic flux imparted thereon; and~~

~~a magnet disposed on said end of said lock pin received through said opening, said magnet being in a first position relative to said sensor when said buckle is in a locked state to cause said sensor to provide a first output, and said magnet being in a second position relative to said sensor when said buckle is in an unlocked state to cause said sensor to provide a second output different from said first output.~~

9. (Currently Amended) An assembly according to claim 8, wherein said shield comprises a shield housing and a cover, and wherein said sensor housing is at least partially disposed within said shield housing ~~and cover~~.

10. (Currently Amended) An assembly according to claim 9, further comprising a ~~screw~~ fastener extending through said shield cover, said sensor housing and said shield housing, said ~~screw~~ fastener engaged with said buckle.

11. (Currently Amended) A seat buckle ~~sensor~~ assembly comprising:

a seat buckle comprising a seat buckle housing;

a sensor housing coupled to said seat buckle housing;

~~comprising~~ a ~~Hall Effect~~ sensor disposed at least partially within said sensor housing; and

a magnetic shield secured to said sensor housing and covering at least a portion of said ~~Hall Effect~~ sensor;

said magnetic shield ~~secured to sensor housing by a snap fit,~~ being directly coupled to said seat buckle for directing magnetic flux imparted on said magnetic shield to said seat buckle.

12. (Cancelled).

13. (Currently Amended) A method of determining a state of a seat buckle comprising:

providing a seat buckle comprising a lock pin, said lock pin movable through a switch zone, said switch zone extending between ~~in~~ a first position ~~when~~ of said lock pin wherein said lock pin achieves a ~~said seat buckle is in a~~ locked ~~state~~ condition and ~~said lock pin in~~ a second position ~~when~~ of said lock pin wherein said lock pin achieves an ~~said seat buckle is in a~~ unlocked ~~state~~ condition;

providing a seat buckle sensor assembly comprising ~~a magnetic shield at least partially surround a senor housing, said sensor housing comprising~~ a sensor; and

providing a magnet disposed on an end of said lock pin~~, said magnet being in a first position relative to said sensor when said lock pin is in said first position and said magnet being~~

~~in a second position relative to said sensor when said lock pin is in said second position~~;

said sensor exhibiting a gray zone range of magnetic flux whereby flux imparted to said sensor beyond a first end of said gray zone range of magnetic flux causes said sensor to provide a first output and flux imparted to said sensor beyond a second end of said gray zone range of magnetic flux causes said sensor to provide a second output, different from said first output, said gray zone range of magnetic flux being within a switch zone range of magnetic flux imparted by said magnet to said sensor as said lock pin travels through said switch zone, whereby said first output is provided as said lock pin travels through said switch zone before said lock pin achieves said locked condition and said second output is provided by said sensor as said lock pin travels through said switch zone before said lock pin achieves said unlocked condition ~~providing a first output when said seat buckle is in a locked state and a second output when said seat buckle is in an unlocked state~~.

14. (Original) The method according to claim 13, wherein said sensor comprises a Hall Effect sensor.

15-20. (Cancelled)

21. (New) The assembly according to claim 1, said assembly further comprising a shield coupled to said sensor housing for blocking magnetic flux.

22. (New) The assembly according to claim 21, wherein said shield comprises an opening positioned for receiving said lock pin.

23. (New) The assembly according to claim 1, said assembly further comprising at least one electrical conductor extending from said sensor housing for coupling an output of said sensor to a location outside of said sensor housing, said electrical conductor being formed in an s-shape around at least a portion of said sensor housing.

24. (New) The assembly according to claim 23, wherein said portion of said housing comprises a pin extending through at least a portion of said housing.

25. (New) The assembly according to claim 8, wherein said sensor further comprises a shield coupled to said sensor housing for blocking magnetic flux.

26. (New) The assembly according to claim 25, wherein said shield comprises an opening, and wherein said lock pin extends through said opening.

27. (New) The assembly according to claim 8, said assembly further comprising at least one electrical conductor extending from said sensor housing for coupling an output of said sensor to a location outside of said sensor housing, said electrical conductor being formed in an s-shape around at least a portion of said sensor housing.